CLAIMS

1. A power amplifier pre-distorter formed by a discrete-time filter structure with filter taps, **characterized** in that said filter structure includes

an individual look-up table (LUT0, LUT1, LUT2; LUT01, LUT11, LUT21) for each filter tap, each look-up table representing a sampled polynomial in a variable representing signal amplitude; and

means (10) for selecting, from each filter tap look-up table, a filter coefficient that depends on the amplitude of a corresponding complex signal value to be multiplied by the filter tap.

2. The pre-distorter of claim 1, **characterized** in that the discrete-time filter structure comprises a FIR filter structure.

3. The pre-distorter of claim 1, **characterized** in that the discrete-time filter structure comprises an IIR filter structure.

4. The pre-distorter of claim 1, **characterized** in that the discrete-time filter structure comprises a combination of a FIR filter structure and an IIR filter structure.

5. The pre-distorter of claim 1, **characterized** by means (LUT02, LUT03, LYT12, LUT13, LUT22, LUT23, 16, 18, 20, 22, 24, 26) for compensating for changes in a predetermined parameter (z).

6. The pre-distorter of claim 5, **characterized** in that said parameter represents average pre-distorter input signal power.

7. The pre-distorter of claim 5, **characterized** in that said parameter represents amplifier temperature.

8. The pre-distorter of claim 5, **characterized** in that said parameter represents power amplifier transistor bias.

9. The pre-distorter of claim 5, **characterized** by means for selecting, from each filter tap look-up table, a filter coefficient that depends on the instantaneous signal power of a corresponding complex signal value to be multiplied by the filter tap.

10. A base station including a power amplifier pre-distorter formed by a discrete-time filter structure with filter taps, **characterized** in that said filter structure includes

an individual look-up table (LUT0, LUT1, LUT2; LUT01, LUT11, LUT21) for each filter tap, each look-up table representing a sampled polynomial in a variable representing signal amplitude; and

means (10) for selecting, from each filter tap look-up table, a filter coefficient that depends on the amplitude of a corresponding complex signal value to be multiplied by the filter tap.

11. The base station of claim 10, **characterized** in that the discrete-time filter structure comprises a FIR filter structure.

12. The base station of claim 10, **characterized** in that the discrete-time filter structure comprises an IIR filter structure.

13. The base station of claim 10, **characterized** in that the discrete-time filter structure comprises a combination of a FIR filter structure and an IIR filter structure.

14. The base station of claim 10, **characterized** by means (LUT02, LUT03, LYT12, LUT13, LUT22, LUT23, 16, 18, 20, 22, 24, 26) for compensating for changes in a predetermined parameter (z).

15. The base station of claim 14, **characterized** in that said parameter represents average pre-distorter input signal power.

16. The base station of claim 14, **characterized** in that said parameter represents amplifier temperature.

17. The base station of claim 14, **characterized** in that said parameter represents power amplifier transistor bias.

18. The base station of claim 10, **characterized** by means for selecting, from each filter tap look-up table, a filter coefficient that depends on the instantaneous signal power of a corresponding complex signal value to be multiplied by the filter tap.